Microarray data (steady-state, time-course)

Binarisation or discretisation

Binary \{0,1\} Ternary \{-1,0,1\} or other discrete values

Regularisation

Heuristic approach

Identify constituent Boolean networks

Determine predictor probability

Inferred PBNs

Structural intervention

**Feature**: permanently alter the underlying network structure with minimal structural modification

**Existing methods**: approaches based on genetic algorithm; one-bit predictor function perturbation; function perturbation based on general perturbation theory in Markov chains, such as the SMV formula.

External control

**Feature**: apply external perturbation to modulate the network dynamic, possibly via auxiliary input variables

**Existing methods**: random gene perturbation; finite-horizon control for modifying the network dynamic over a transient period of time; infinite-horizon control to change the steady-state distribution.

Goal: to increase the probability of reaching desirable states in an inferred PBN